Remarks

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Thus, claims 2 and 3 have been amended to delete the parentheses, except as noted below, thereby rendering the rejection of claims 2-9 under the second paragraph of 35 U.S.C. §112 moot.

In amending claim 2, the parentheses have been retained around the second occurrence of ΔHm - ΔHc for clarity, considering that it is this value, rather than ΔHc, which is divided by ΔHm to obtain the value of not less than 0.85.

The Examiner has provisionally rejected claims 1-3, 5 and 7 for obviousness-type double patenting as being unpatentable over claims 1, 2 and 4 of Serial No. 10/565,532. In response to this rejection, Applicants are submitting herewith a Terminal Disclaimer, rendering the rejection moot.

The patentability of the presently claimed invention over the disclosures of the prior art references applied by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 1, 2, 4 and 6 under 35 U.S.C. §102(b) as being anticipated by JP 2000-017163 (Fujii), as well as the rejection of claims 3, 5 and 7-9 under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) based on this same reference, are respectfully traversed.

Fujii discloses a crystalline polylactic acid polymer composition obtained by melt-blending an amorphous polymer (A) (70 to 95 mole % of L-lactic acid and 5 to 30 mole % of D-lactic acid and/or other copolymer components) and an amorphous polymer (B) (70 to 95 mole % of D-lactic acid and 5 to 30 mole % of L-lactic acid and/or other copolymer components) in a predetermined ratio (claim 1 of Fujii). The crystalline polylactic acid polymer composition thus obtained can be formed into, for example, films and sheets by injection molding, extrusion molding, vacuum molding, blow molding, etc. (claim 3 of Fujii).

On the other hand, claim 1 of the present invention is directed to a polylactic acid polymer composition comprising a mixture of an amorphous polylactic acid polymer and a crystalline polylactic acid polymer. The thus obtained polylactic acid polymer composition can be formed into sheets for thermoforming, and other thermoformed objects such as blister containers, food containers and shell-shaped packaging cases. These sheets and thermoformed

objects have excellent impact resistance, heat resistance and transparency (page 4, lines 1-4 from the bottom of the present specification).

In item 8, in discussing the Fujii reference, the Examiner states that it discloses a composition comprising polymer (A) and polymer (B), wherein polymer (A) is a crystalline polymer, and the polymer (B) is an amorphous polymer, apparently referring to paragraphs 0022-0030 of the machine translation of this reference. However, these portions of the reference, as well as, for example the abstract and claim 1 of the reference, indicate that both polymers (A) and (B) are amorphous polymers. That is, contrary to the position taken by the Examiner, Fujii does not disclose that polymer (A) is a crystalline polymer.

Thus, Fujii differs from the present invention in that Fujii is directed to a mixture of amorphous polymers, while the present invention is directed to a mixture of an amorphous polymer and a crystalline polymer. The present invention also differs from Fujii in that the composition according to the present invention has excellent impact resistance and heat resistance, while Fujii does not refer to these properties.

Although the composition of Fujii is a mixture of two amorphous polymers, it shows crystallinity after mixing. Because the composition of Fujii has crystallinity after mixing, it may be thought that the composition has as high impact resistance and heat resistance, as does the claimed composition.

However, it is apparent that this is not the case, from Comparative Example 4 described in the present specification. Comparative Example 4 is a resin mixture of an amorphous polylactic acid comprising 10.3 mole percent of D-lactic acid and 89.7 mole percent of L-lactic acid (Table 1), and a low crystalline polylactic acid comprising 7.4 mole percent of D-lactic acid and 92.6 mole percent of L-lactic acid. The latter, i.e. the "low-crystalline polylactic acid" comprises L-lactic acid and D-lactic acid that are mixed in a ratio that meets the mixture ratio of the amorphous polymer of Fujii. Also, the language "low crystalline" means that crystallinity is lower than "high crystalline" and "medium crystalline". Although "low crystalline" polymers are not necessarily completely non-crystallizable, they are indeed difficult to crystallize. Thus, low crystalline polymers are ordinarily considered to be "amorphous".

The composition in Comparative Example 4 has a value ΔHm (heat of fusion), and a sheet made of this composition has a value ΔHm (heat of fusion) and ΔHc (heat of cold

crystallization). This clearly indicates that the composition and the sheet obtained in Comparative Example 4 have crystallinity.

Thus, it is apparent that the composition of Comparative Example 4 corresponds to the composition disclosed in Fujii, and the former, i.e. the composition of Comparative Example 4 is inferior in impact resistance and heat resistance (see Table 2). This clearly indicates that the composition of Fujii is also inferior in impact resistance and heat resistance. In contrast, the composition of the present invention, which is a mixture of an amorphous resin and a crystalline resin, has superior impact resistance and heat resistance.

For these reasons, Applicant takes the position that the presently claimed invention is clearly patentable over the Fujii reference.

The rejection of claims 1, 2, 4 and 6 under 35 U.S.C. §102(b) as being anticipated by JP 2002-155197 (Tanide), as well as the rejection of claims 3, 5 and 7-9 under 35 U.S.C. §102(b) or 35 U.S.C. §103(a) based on this same reference, are respectfully traversed.

As indicated above, claim 1 of the present application is directed to a composition comprising a crystalline polylactic acid and an essentially amorphous polylactic acid polymer, wherein the content of the essentially amorphous polylactic acid polymer is higher than 50% of the content of the crystalline polylactic acid.

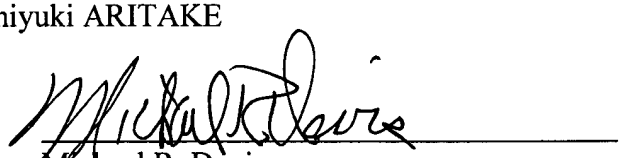
Tanide discloses a biodegradable, heat-resistant resin composition comprising 50 to 99.9% by mass of a polylactic acid resin containing not less than 20% by mass of high crystalline polylactic acid having an L/D ratio (mole ratio) of not less than 95/5 or not more than 5/95, and 0.1 to 2.5% by mass of isocyanate compound (claim 1 and paragraph 0010). In Examples 12, 13, 17, 18, 20 and 21 in Table 1 (paragraph 0042), "PLA1" is used as another polylactic acid. As indicated below Table 2 (paragraph 0043), PLA1 is a polylactic acid having a mole ratio (L/D ratio) of 95/5 and a weight-average molecular weight of 200000. Thus, PLA1 has a mole ratio that is the lower limit of the mole ratio range of the high crystalline polylactic acid defined in claim 1. It is apparent that the "low crystalline polylactic acid" used in any of the examples of Tanide clearly has a certain degree of crystallinity, though not high crystalline, and thus differs from the amorphous polylactic acid polymer used in the composition of the present invention.

For these reasons, Applicants take the position that the presently claimed invention is clearly patentable over the Tanide reference.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

Toshiyuki ARITAKE

By: 

Michael R. Davis
Registration No. 25,134
Attorney for Applicant

MRD/pth
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
November 20, 2008